

**REMARKS**

In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.

Claims 1-26 remain in this application. Applicant believes that no new matter is added to the application as part of this response.

**1. Amendments**

Claims 1, 2, 4-10 and 13-21 have been rewritten to correct informalities and to more clearly point out the claimed invention.

New claim 24 recites an optical device including a coated optical fiber and a mechanical squeezer. Support for this claim is found throughout the specification as filed, for example, in original claim 18. Claims 25-26 depend from claim 24, reciting limitations similar to those found in original claims 7 and 10. Please charge the fee under 37 C.F.R. §§1.16(b)-(c) of \$138 for one new independent claim and three new claims in excess of twenty to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

**2. Claim Rejections - 35 U.S.C. §103 – Chawla**

The Examiner has rejected claims 1-3 and 5-14 under 35 U.S.C. §103(a) as being unpatentable over US 2001/0008906 (Chawla). The Examiner asserts that “Chawla discloses in table 1, ex. 3 a radiation curable coating, which is usable as an inner primary coating of an optical fiber”. The Examiner further asserts that “since Chawla discloses a coating having the chemical composition specified by claim 2...it would inherently possess [the] residual stress properties as set forth in claims 1, 5 and 7.”

Applicant respectfully disagrees with the Examiner’s assertion that the examples of Table 1 of Chawla are suggested for use as inner primary coatings. The invention in Chawla is broadly directed to coating compositions having a low concentration of urethane bonds. Chawla does suggest in paragraph [0018] that such compositions “are adaptable for use as inner primary coatings, outer primary coatings, colored secondary coatings, in coatings, bundling materials, ribbon matrix materials, and colored matrix materials on optical fibers”. However, this suggestion does not

imply that any coating composition having a low concentration of urethane bonds is suitable for use in a particular one of the recited applications. As the skilled artisan would appreciate, the properties of a desirable coating composition depend strongly upon the intended use.

Conventional optical fibers are coated with a dual coating system including an inner primary coating (also known as a primary coating) and an outer primary coating (also known as a secondary coating). In paragraphs [0191] to [0193] of the Chawla, desirable attributes of inner primary coatings and outer primary coatings are described. The outer primary coating is desirably tough or hard enough to protect the optical fiber and underlying coatings, and desirably has a modulus of 10 MPa or greater, and a glass transition temperature of about 40 °C or greater. The inner primary coating is typically softer in comparison to the outer primary coating, having a modulus (e.g., less than 10 MPa) and glass transition temperature (e.g. -20 °C or less) suitable for protecting the optical fiber from microbending. The examples in Tables 1-3 of Chawla are high modulus coatings, and would be suitable for use as outer primary coatings. Chawla does not explicitly suggest the use of the examples in Tables 1-3 as inner primary coatings for optical fiber. The skilled artisan would not be motivated to use the examples in Tables 1-3 as an inner primary coating, as the modulus and glass transition temperature of the materials would not be sufficiently high to protect the optical fiber from microbending. In fact, the skilled artisan would be motivated to use coatings that exhibit significantly high stress-relaxation (i.e., a low residual stress) as inner primary coatings, in order to reduce the stress transmitted to the fiber by external forces and thereby reduce microbending.

Applicant also respectfully disagrees with the Examiner's assertion that a polymeric material made from any composition falling within the range of claim 2 and having a Young's modulus of at least 100 MPa would necessarily exhibit the stress-relaxation behavior claimed in claims 1, 5 and 7. The stress-relaxation behavior of a polymeric material is not strictly a function of modulus, and can vary significantly over materials with different moduli. In order to be inherent, a property must be "necessarily present in the thing described in the reference and that it would be so recognized by persons of ordinary skill." (Continental Can Co. USA v. Monsanto Co., (20 USPQ2d 1746, 1749-50 (Fed. Cir. 1991)) "The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient" to prove inherency. (*In re Oelrich*, 212 USPQ 323, 326 (C.C.P.A. 1981)) While polymeric

materials formed from compositions within the compositional range of claim 2 and having a Young's modulus of at least 100 MPa may exhibit the stress-relaxation behavior of claims 1, 5 and 7 (as do the Examples of the present application), Applicant submits that such behavior is not inherent to the entire class of polymeric materials.

Claim 1 of the present application recites that the polymeric material on the surface of the cladding exhibits a residual stress of at least about 60 MPa in response to application of a stress of about 80 MPa at about 80°C followed by a stress-relaxation period of at least about 1 hour at about 80°C. As described above, Applicant submits that this stress-relaxation property is not inherent in the coatings of Chawla. Further, even if the coatings of Tables 1-3 of Chawla are considered *arguendo* to have the claimed stress-relaxation property, they are not formed on the surface of the cladding. Rather, they are outer primary coatings formed on the surface of a suitable inner primary coating. Chawla does not teach or suggest the formation of any high modulus coating on the surface of the cladding of the optical fiber; rather, Chawla suggests the use of low modulus coatings as inner primary coatings. As such, Applicant submits that Chawla does not suggest to the skilled artisan the formation of a coating with the claimed stress-relaxation properties on the surface of the cladding of an optical fiber. Applicant therefore submits that claim 1 is patentable over Chawla.

Claims 2, 3, 6 and 12-14 depend ultimately from claim 1, and are likewise believed to be patentable over Chawla.

Claims 5 and 7 depend from claim 1, respectively reciting residual stresses of at least 68 MPa and 76 MPa. As described above, the stress-relaxation behavior of a material is dependent on a number of factors, and can vary widely from material to material. Applicant submits that the materials of Chawla do not inherently have the stress-relaxation properties as claimed in claims 5 and 7, and submits that claims 5 and 7 are patentable over Chawla.

Claims 8 and 9 recite depend from claim 1, respectively reciting that the polymeric coating has a thickness of more than about 35  $\mu\text{m}$ , and more than about 62.5  $\mu\text{m}$ . The Examiner asserts that "Chawla discloses a coating which is 75 microns thick (see [0205])." While Chawla does disclose a 75 micron thick layer of material, this layer of material is formed by drawdown onto a planar surface to form a 75

micron thick film for testing purposes. Chawla is silent regarding the thickness of the coatings on an actual optical fiber. Inner primary coatings on optical fibers are typically about 33 µm in thickness, while outer primary coatings on optical fibers are typically about 27 µm in thickness. As such, Applicant suggests that Chawla does not suggest that the skilled artisan form a layer of material with the claimed stress-relaxation properties more than about 35 mm in thickness. Applicant therefore submits that claims 8 and 9 are patentable over Chawla.

Claims 10 and 11 depend from claim 1, respectively reciting that the Young's modulus of the polymeric coating is at least about 100 MPa; and at least about 600 MPa. As described above, Chawla suggests that a coating of low Young's modulus (e.g., less than 10 MPa) be formed on the outer surface of the cladding of the optical fiber in order to reduce microbending. Chawla therefore teaches away from forming a high modulus coating on the outer surface of the cladding of the optical fiber. As such, Applicant submits that claims 10 and 11 are patentable over Chawla.

Since claims 1-3 and 5-13 are believed to be patentable over Chawla, Applicant requests that the Examiner withdraw the rejections under 35 U.S.C. §103(a) thereof.

### **3. New Claims**

New claims 24-26 are drawn to an optical device including a coated optical fiber having a coating with a recited stress-relaxation property and a mechanical squeezer. Applicant submits that such a device is not taught or suggested in the cited references, and believes these claims to be patentable over the prior art of record.

### **4. Allowable Subject Matter**

Applicant thanks the Examiner for indicating that the subject matter of claims 4 and 15-23 are allowable. Claim 4 depends from claim 1, which is believed to be allowable as described above. Claims 15-23 have been rewritten to increase clarity.

### **5. Information Disclosure Statement**

Applicant notes that the Information Disclosure Statement/PTO-1449 mailed by Applicant on February 27, 2003 does not appear to have been considered by the Examiner. Applicant requests that the Examiner forward an initialed copy of the

PTO-1449 with the next Office Action. Please contact the undersigned immediately if this Information Disclosure Statement/PTO-1449 is not in the file.

## 6. Conclusion

Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims 1-26 of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims and a prompt Notice of Allowance thereon.

Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. §1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Please direct any questions or comments to James V. Suggs at 607/974-3606.

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Respectfully submitted,

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